

CLAIMS

What is claimed is:

1           1.    A computer system comprising an execution  
2    environment for agents, wherein said execution environment  
3    includes a monitor mechanism for monitoring a message  
4    transmitted from one of said agents.

1           2.    A computer system as set forth in claim 1,  
2    wherein said monitor mechanism comprises a manager agent.

1           3.    A computer system as set forth in claim 2,  
2    wherein said manager agent has a function for receiving a  
3    message from a source agent and for transferring said  
4    message to a destination agent.

1           4.    A computer system as set forth in claim 2,  
2    wherein said manager agent has a function for transmitting  
3    messages from a specific agent to agents other than a  
4    destination agent.

1           5.    A computer system as set forth in claim 2,  
2    wherein said manager agent has a registration function for  
3    registering an agent which has transmitted a registration  
4    message to said manager agent in response to receiving said  
5    registration message, said agent being operative to begin  
6    its activity within said execution environment.

1           6.    A computer system as set forth in claim 5,  
2    wherein said registration message includes an agent type of  
3    a source agent of said registration message, and wherein  
4    said registration function of said manager agent performs  
5    a registration process in accordance with said agent type.

1           7. A computer system as set forth in claim 2,  
2 wherein said manager agent has a function for registering  
3 a source agent of a monitor registration message and a  
4 condition of messages to be transferred to said source  
5 agent and transmitted from another agent in response to  
6 receiving the monitor registration message from the source  
7 agent which begins its activity within said execution  
8 environment, said monitor registration message includes  
9 said condition.

1           8. A computer system according to claim 7, wherein  
2 said registering function includes:

3           means for determining whether said condition in said  
4 monitor registration message is registered in said  
5 manager agent; and

6           means for storing a source agent so as to correspond  
7 to said condition when said condition is registered.

1           9. A computer system according to claim 7, wherein,  
2 in response to the reception of a message transmitted from  
3 an agent, said transferring function searches for  
4 registered conditions by content of said message, and  
5 wherein when there exists a condition that matches the  
6 content of said message, said transferring function  
7 transmits said message to a registering source agent of  
8 said condition.

1           10. A computer system according to claim 1, wherein  
2 said execution environment is a virtual mall.

1           11. A computer system according to claim 10, wherein  
2 said message includes an agent type of said message, and

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3 wherein said agent type is comprised of one of a customer  
4 agent and a shop agent.

1           12. A computer system according to claim 2, wherein  
2    said computer system further comprising an agent that has  
3    means for transmitting a registration message for  
4    requesting its registration to said manager agent.

1           13. A computer system according to claim 2, further  
2   comprising an agent, said agent including:

3       a data storage for storing a condition of messages to  
4       be transferred to itself by said manager agent and  
5       transmitted by another agent; and

6 means for transmitting said condition as a monitor  
7 registration message to said manager agent.

1           14. A computer system according to claim 13, wherein  
2    said agent further comprises:

3 means for receiving a message from another agent;

4 means for, when said received message is a message  
5 addressed to a different agent, preparing an  
6 associated message that includes contents associated  
7 with said received message; and

8 means for transmitting said associated message to said  
9 different agent.

1        15. A computer system according to claim 14, wherein  
2        said means for preparing said associated message includes:

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3 means for checking said contents of said received  
4 message and for extracting holding information  
5 concerning said contents of said received message; and

6 means for converting said holding information into  
7 said form of a message.

1        16. A method executed by a manager agent for  
2        monitoring a message transmitted from an agent in an  
3        execution environment for agents, said execution  
4        environment included in a computer system, said method  
5        comprising the steps of:

6 receiving a message transmitted from a specific agent;

7        searching for a registered condition by using contents  
8        of said message, and if there is a registered  
9        condition matched with said contents of said message,  
10       transmitting said message to an agent that registered  
11       said matched condition; and

12 transmitting said message to a destination agent of  
13 said message.

1           17. A method as set forth in claim 16, further  
2 comprising the steps of:

3 receiving a monitor registration message from a  
4 registering agent, the monitor registration message  
5 including a condition of the messages transmitted from  
6 another agent and to be transferred to the registering  
7 agent, the registering agent beginning its activity on  
8 the execution environment; and

9 in response to receiving the monitor registration  
10 message, registering the registering agent and the  
11 condition included in the monitor registration  
12 message.

1 18. A method as set forth in claim 17, wherein the  
2 registering step further includes the steps of:

3 determining whether the condition in the monitor  
4 registration message is registered in the manager  
5 agent; and

6 if the condition is register, storing the registering  
7 agent in correspondence with the condition.

1 19. A method according to claim 16, further  
2 comprising the steps of:

3 receiving a registration message from a source agent  
4 that has begun its activity within the execution  
5 environment; and

6 registering the source agent of the registration  
7 message.

1 20. An associated message transmission method  
2 executed by an agent in a computer system including an  
3 execution environment for agents, the execution environment  
4 executing a manager agent for monitoring a message  
5 transmitted from the agent, the method comprising the steps  
6 of:

7 receiving a message from another agent;

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8 if the received message is a message addressed to a  
9 different agent, preparing an associated message that  
10 includes contents associated with the received  
11 message; and  
  
12 transmitting the associated message to the different  
13 agent.

1 21. An associated message transmission method as set  
2 forth in claim 20, wherein the preparing step further  
3 comprises the steps of:

4 checking the contents of the received message;  
  
5 extracting holding information concerning the contents  
6 of the received message; and  
  
7 converting the holding information into the form of a  
8 message.

1 22. An associated message transmission method as set  
2 forth in claim 20, further comprising the step of  
3 transmitting a condition of messages transmitted from  
4 another agent and to be transferred by the manager agent,  
5 as a monitor registration message to the manager agent.

1 23. An associated message transmission method as set  
2 forth in claim 20, further comprising the step of  
3 transmitting a registration message for requesting the  
4 registration of itself to the manager agent.

1 24. A storage medium storing a program for monitoring  
2 a message from an agent in a computer system including an  
3 execution environment for agents, said program enabling

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4 said computer system to perform the steps of:

5 receiving a message from a specific agent;

6 searching for a registered condition by using contents  
7 of said message, and if there is a registered  
8 condition matched with said contents of said message,  
9 transmitting said message to an agent registering said  
10 matched condition; and

11 transmitting said message to a destination agent of  
12 said message.

1 25. A storage medium as set forth in claim 24,  
2 wherein said program further comprises the steps of:

3 receiving a monitor registration message from a  
4 registering agent, said monitor registration message  
5 including a condition of messages transmitted from  
6 another agent and to be transmitted to the registering  
7 agent, said registering agent beginning its activity  
8 on said execution environment of said agents; and

9 in response to receiving said monitor registration  
10 message, registering said registering agent and said  
11 message condition included in said monitor  
12 registration message.

1 26. A storage medium as set forth in claim 25,  
2 wherein said registering step further includes the steps  
3 of:

4 determining whether said condition in said monitor  
5 registration message is registered in said manager

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6 agent; and

7 when said condition is registered, storing said  
8 registering agent in correspondence with said  
9 condition.

1 27. A storage medium as set forth in claim 24,  
2 wherein said program further comprises the steps of:

3 receiving a registration message from an agent that  
4 has begun its activity in said execution environment;  
5 and

6 registering the source agent of said registration  
7 message.

1 28. A storage medium storing an agent in a computer  
2 system including an execution environment for agents, said  
3 execution environment executing a manager agent for  
4 monitoring a message from said agent, said agent causing  
5 said computer system to perform the steps of:

6 receiving a message from another agent;

7 if the received message is a message addressed to a  
8 different agent, preparing an associated message that  
9 includes contents associated with the received  
10 message; and

11 transmitting said associated message to said different  
12 agent.

1 29. A storage medium as set forth in claim 28,  
2 wherein said preparing step further includes the steps of:

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3           checking said contents of said received message;  
4           extracting holding information concerning said  
5           contents of said received message; and  
6           converting said holding information into said form of  
7           a message.

1           30. A storage medium as set forth in claim 28,  
2           wherein said agent further causing said computer system to  
3           perform a step of transmitting a condition of messages  
4           transmitted from another agent and to be transferred by  
5           said manager agent, as a monitor registration message to  
6           said manager agent.

1           31. A storage medium as set forth in claim 28,  
2           wherein said agent further causing said computer system to  
3           perform a step of transmitting a registration message for  
4           requesting the registration of itself to said manager  
5           agent.

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